REMARKS

Allowable Claim

Applicant gratefully acknowledges that the subject matter of claim 2 is allowable if

rewritten to overcome the rejection under 35 USC 112, 2nd paragraph.

As discussed below, the claims have been amended to overcome the rejection.

Rejection Under 35 USC §112

Claims 1 and 2 were rejected under 35 USC §112, second paragraph, as being

indefinite.

Accordingly, the claims have been amended to delete the recitation regarding the data (a),

(b), and (c). Thus, amended claims 1 and 2 no longer have the allegedly indefinite recitations.

Rejection Under 35 USC §102

Claim 1 was rejected under 35 USC §103(a) as being anticipated by the article

"Detecting Grain-Boundary Chromium Depletion in Inconel-600" by Airey et al.

Applicant respectfully traverses this rejection.

The method of Airey et al is for qualitative determination of chromium-impoverished

region. In contrast, the present invention is directed to a method of quantitatively determining

the volume of the chromium impoverished region in a divided manner. Thus, the quality and

quantity of the information differs between the present invention and the method of Airey et al.

A conventional inspection method based on the measurement of magnetic susceptibility, as shown in Airey et al, permits only qualitative observation of precipitates of chromium atoms and a chromium impoverished region in the vicinity of the crystal grain boundaries.

The volume of a chromium impoverished region caused by the formation of chromium carbide precipitates in a chromium-containing nickel-based alloy is not determined in a divided manner on the basis of the chromium concentrations in chromium impoverished region.

The inventor has developed a method which is capable of quantitatively measuring the presence of a chromium impoverished region causing grain-boundary attack cracking in a chromium-containing nickel-based alloy, by use of a magnetic means, and an inspection apparatus for use in this method.

Airey et al does not teach or suggest, among other things, "calculating v_k according to the following formula (1) to quantitatively determine the volume of the chromium impoverished region in a divided manner on the basis of the chromium concentrations:

$$M_s(T_i) = \sum_{k=1}^{i} \frac{v_k M_k(T_i)}{V} \qquad (1),$$

wherein: v_k is the volume of the chromium impoverished region having a chromium concentration C_k; V is the volume of said test piece; k is a natural number to be determined in conjunction with dividing the range of a minimum measuring temperature T_{min} to a maximum measuring temperature T_{max}, into n equal parts, in conformity to measurement conditions; and $M_k(T_i)$ is a saturation magnetization at a measuring temperature T_i in the

chromium impoverished region having the chromium concentration C_k, said saturation magnetization being obtained in advance."

For at least these reasons, claim 1 patentably distinguishes over Airey et al.
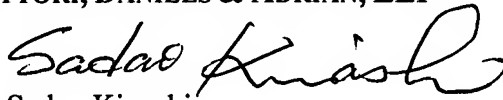
In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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